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MRS Bulletin

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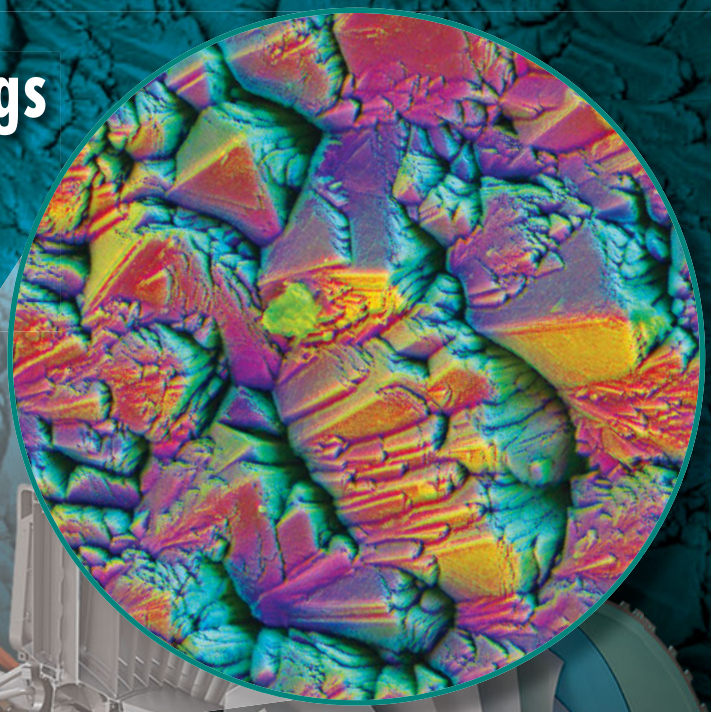
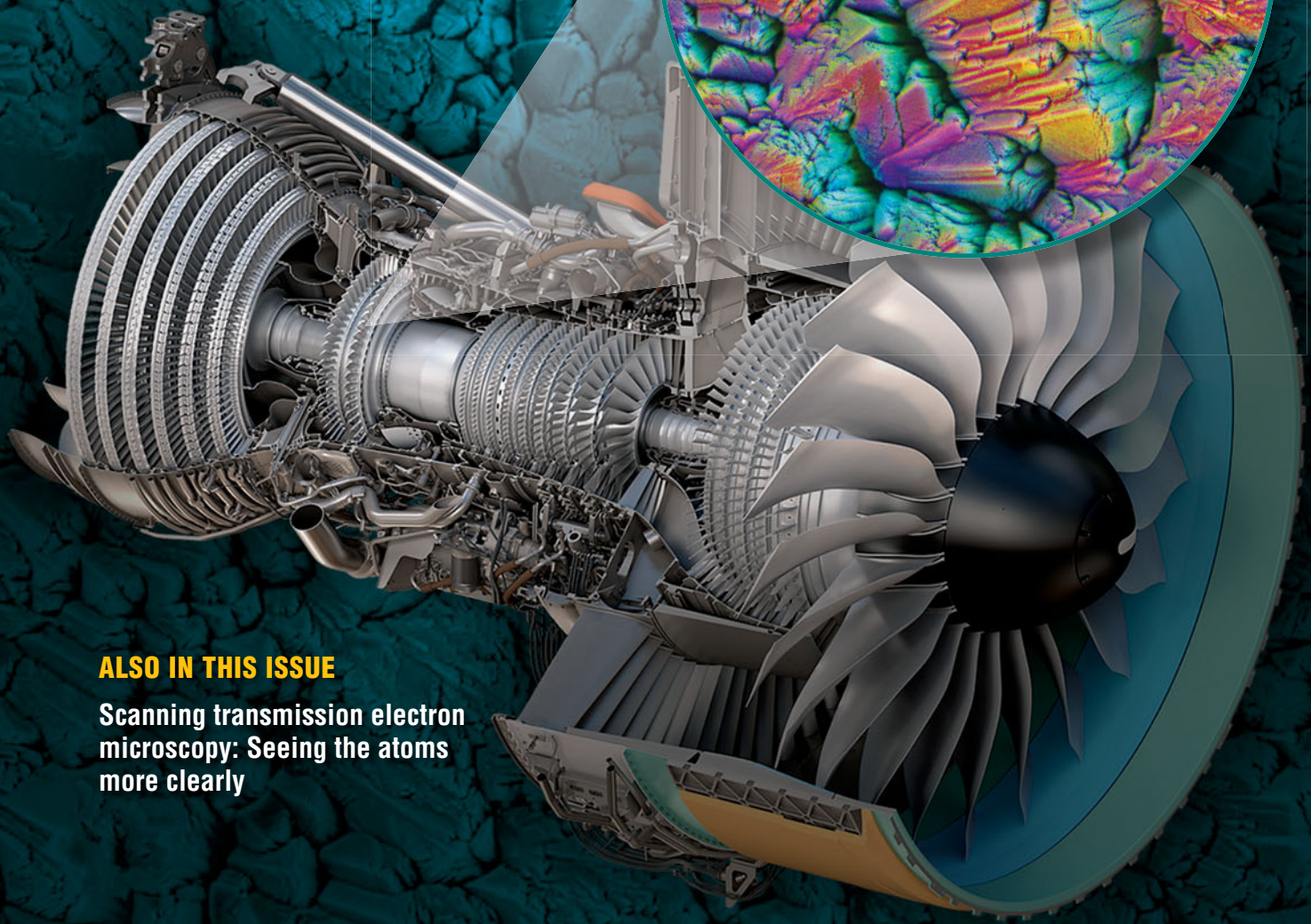
Thermal-barrier coatings for more efficient gas-turbine engines





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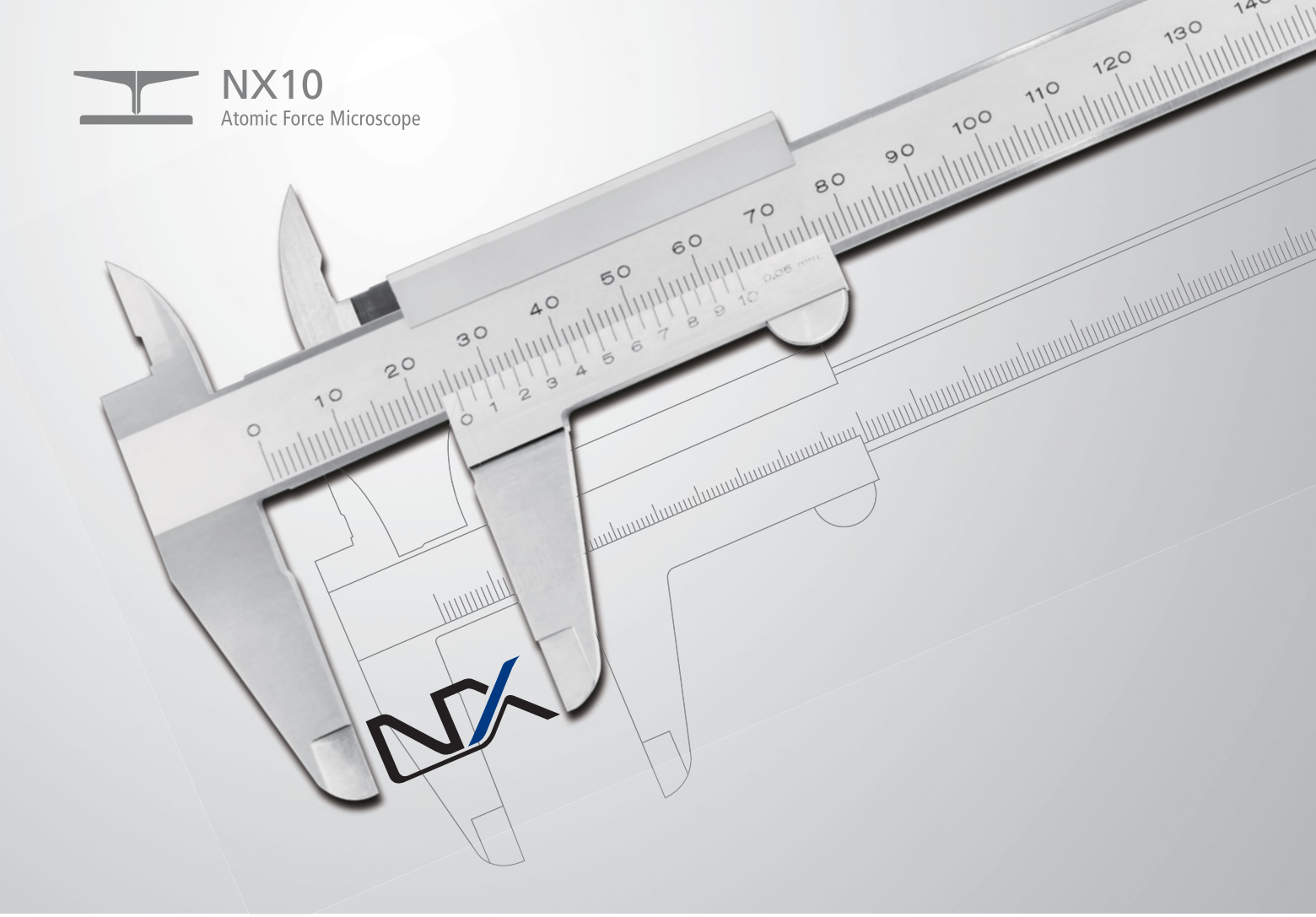

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ON THE COVER

Thermal-barrier coatings for more efficient gas-turbine engines. This issue of *MRS Bulletin* focuses on thermal-barrier coatings used in gas-turbine engines on metallic parts in the hottest regions, enabling the engines to operate at higher gas temperatures than their predecessors, thereby improving efficiency and power. The cover shows a cutaway section of a GP7200 jet engine manufactured by Engine Alliance, a joint venture of General Electric and Pratt & Whitney. (Image courtesy of Engine Alliance.) The inset (and background) is a scanning electron micrograph (orientation-dependent color) showing the top surface of a thermal-barrier coating deposited by the electron-beam physical vapor process. (Micrograph courtesy of James Weaver, School of Engineering and Applied Sciences, Harvard University.) See the technical theme that begins on page 891.

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EDITORIAL OFFICE 506 Keystone Drive, Warrendale, PA 15086-7573 USA
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